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§ 365. **North-Eastern Notes.** 1879.—As the result of another season's careful herborizing in this well-worked field, I am able to report a few finds that may be of some interest.

*Arenaria verna*, L., *var. hirta*, Watson, still lingers in Smuggler's Notch, Vt.: as only a few specimens scattered over a small area were found, its hold on the soil of this region, like that of *Gentiana Amarella*, L., *var. acuta*, Hook. f., *Carex atrata*, L., *Luzula spicata*, Desv., *Woodsia hyperborea*, R. Br., and some other denizens of this boreal garden, must be feeble, and its existence in the flora of Vermont, like theirs, precarious.

*Pyrola secunda*, L., *var.*, *pumila*, Paine. This distinct form of *P. secunda*, L., is very abundant in the cold cedar swamps and sphagnous bogs of Western Vermont. It is associated with *P. rotundifolia*, L., *var. uliginosa*, Gray, *Cypripedium arietinum*, R. Br., and *Orchis rotundifolia*, Pursh.

*Nuphar luteum*, Smith, is a common plant in the sluggish streams which flow into Lake Champlain on the Vermont side. In size the species is hardly less than *N. advena*, Ait., hence I have in previous years passed it by, mistaking it for that species. Mr. Jesup first detected it in these waters in 1873, and sent to Mr. Watson specimens which he collected near the mouth of the Mississquoi River.

It is really very distinct from *N. advena*, in the rhizome, smaller, white, and velvety; in the number of the sepals, which, however, is not always constant, since my friend Prof. Brainerd has not very rarely counted six; and in the fewer-rayed stigma, crimson like that of *N. pumilum*, Smith. With respect to its relation to the last-named species, the impression which I have derived from a study of the two species and a comparison of living plants of both with the characters given in Hooker's British Flora, is that the difference between the two is mainly one of size. With regard to the plants of the two species growing intermixed in the waters of Lake Champlain, this difference in size is so great, as far as I have observed, that there is no trouble in separating the two; but in lakes of Lower Canada and Northern Maine I have seen *N. pumilum* varying much in size, and growing so large as to lead me to examine it closely, to see if it might not be *N. luteum*.

*Littorella lacustris*, L., wet sandy shore of Lake Champlain, Alburgh, Vt., in flower, Sept. 2. Here is a new genus of the Order Plantagineae for the manuals of the United States. It is not in Gray's Flora of North America; but since the publication of that, Prof. Macoun has credited it to America in his catalogue of the Dominion of Canada.

*Eleocharis olivacea*, Torr., Bristol Pond, Vt., growing on the surface of the black mire about the edge of the pond.

On the extensive bog bordering this same pond Mr. Brainerd and I, last June, came upon a patch of *Carex livida*, Willd.

*Rhododendron maximum*, L., borders of Long Pond among the Green Mts., some twenty-five miles east of Montpelier, attaining in this, which must be one of its extreme stations westward, a height of only two or three feet.

*Equisetum palustre*, L., enters New England from the north

through another thoroughfare than that of Lake Champlain, namely by the St. Francis River of N. Maine.

*Juncus Vaseyi*, Engelm., and *Nabalus racemosus*, Hook., extend as far east as the shores of the St. John's of N. Maine; and there, also, were found *Primula Mistassinica*, Michx., *Anemone multifida*, DC., *Vaccinium caespitosum*, Michx., and *Allium Schoenoprasum*, L.

As *Erigeron acre*, L., was seen not many miles north of Maine, it is very probable that it grows within its borders.

On the south shore of the St. Lawrence, about one hundred miles below Quebec, I found myself last August surrounded by a flora almost subarctic in character. Stunted growths of *Abies alba*, Michx., *A. nigra*, Poir, and *A. balsamea*, Marsh., constituted almost the entire arboreal vegetation seen along the shore. Growing from the crevices of rocks, usually within reach of the salt waves, *Plantago maritima*, L., a plant which Gray's Flora locates north of the Gulf of St. Lawrence, was abundant. Higher up, *Empetrum nigrum*, L., and *Vaccinium Vitis-Idaea*, L., carpeted the scanty soil, and with these mingled *Draba incana*, L., *D. arabisans*, Michx., *Zygadenus glaucus*, Nutt., *Potentilla Pennsylvanica* L., *Cerastium arvense*, L., *Archangelica Gmelini*, DC., *Conioselinum Canadense*, T. & G., *Gentiana Amarella*, L., *var. acuta*, Hook. f., *Halenia deflexa*, Griseb., etc.

On the beaches, among the more common plants of the seaside, *Mertensia maritima*, Don, trailed profusely its glaucous fillets spangled with blue flowers, and *Poa glumaris*, Trin., a species of Siberia and Alaska, had spread abundantly by means of its thick subterranean stems. *Elymus mollis* was common with the latter. In the marshes *Nabalus racemosus*, Hook., was common, (as, also, in higher situations,) *Aster angustus*, T. & G., was seen; *Catabrosa aquatica*, Beauv., was not rare; and common with *Carex maritima*, Vahl., and *C. salina*, Wahl., were *C. Norvegica*, Schk., *C. limula*, Fries, and *C. helvola*, Blytt? The purple plumes of *Hordeum jubatum*, L., were waving everywhere. In places where the grasses and sedges were sparse, the slimy surface of the marsh was covered with *Stellaria humifusa*, Rottboll.; and, where a rill spread over the border of a marsh, I came upon a large patch of *Pedicularis palustris*, L., *var. Wlassoviana*, Bunge, a plant hitherto supposed to grow no nearer than Hudson's Bay. In low wet places among the rocks with *Juncus Balticus*, Dethard, *Glaux maritima*, L., etc., *Pleurogyne rotata*, Griseb., and *Blysmus rufus*, Link., were detected. In the fields near the shore, the herbage upon which the cows were feeding was chiefly composed of *Poa pratensis*, L., indigenous form, *Festuca ovina*, L., supposed also to be native, *Vicia cracca*, L., *Carex atrata*, L., *Poa caesia*, Smith, *Euphrasia officinalis*, L., a form four to six inches high and much branched, doubtless introduced from Europe like the two following, *Rhinanthus Cristagalli*, L., *Silene inflata*, Smith, *Primula farinosa*, L., *Potentilla Pennsylvanica*, L., *P. tridentata*, Ait., and *Gentiana Amarella*, L., *var. acuta*, Hook. f.

C. G. PRINGLE.

EAST CHARLOTTE, VT.

**Aspidium spinulosum.**--In the North Woods I found an *Aspidium*

in regard to which, after considerable study, I am not able to satisfy myself. The fern of which I speak was found at the foot of a declivity in damp woods, in a rich bottom through which runs a brook. It is of medium size, from 1 1-2 to 2 feet high, the stipe and rachis slender, fronds bipinnate, pinnae and pinnules not closely set but rather distant from each other, pinnules of the lower pinnae lobed or somewhat pinnatifid, but all having distinct spaces between them, and not touching or overlapping as do the pinnules of *A. intermedium*. Another peculiarity is, that pinnae of the same pair often differ from  $\frac{1}{2}$  to 1 inch in length, so the fronds are frequently unsymmetrical. After reviewing all the descriptions of species and varieties in this section which I can find, Newman's *Lastraea spinosa* seems to come nearest to it. Let me quote from his delightful "History of British Ferns," 2nd edition, "The pinnae are pinnate, and the pinnules detached and often distant. On the first pair of pinnae the first and second inferior pinnules are of nearly equal length, and are nearly twice as long as the corresponding superior ones; a somewhat similar discrepancy is observable in the pinnules of the second pair of pinnae, but beyond these it becomes scarcely observable; some of the lower pinnules are deeply pinnatifid, almost pinnate. The veins in the pinnules are alternately branched, each system of branches entering a division of the pinnule, and the *anterior* branch bearing a circular cluster of capsules; this cluster is covered by a flat reniform involucre, the margins of which are sinuate, generally entire, and always *without* stalked glands, a character which, as far as my observation has extended, is constant, and is of great importance in distinguishing this species from those which follow, (viz: *Lastraea dilatata*, and *recurva*.) This character sufficiently distinguishes the present plant from the *spinulosa* of Swartz, Willdenow, Schkuhr and Francis. Owing to the constant position of these clusters on each pinnule, they form a regular double line, the midvein of the pinnule passing up the centre; but when the pinnule is completely divided into lobes, each branch of the vein usually bears a cluster of capsules; this is more frequently the case in those pinnules which are nearest the main stem of the frond; and it may be observed that the clusters on all, except the usual capsule-bearing branch, are of smaller size. The seed is confined to the upper portion of the frond; exceptions to this are of rare occurrence. Each branch of the vein enters one of the serratures of the pinnule, but terminates before reaching the spine, with which it is quite unconnected."

I have condensed the above by leaving out sentences or parts of sentences, retaining only the pith of the description. It gives a very correct idea of the fern which I have found. I would add that the anterior vein upon which the sori are situated sometimes terminates "within the radius of the fruit-dot," as Mr. Davenport phrases it, but almost as often goes beyond it. It will be noticed that Newman classes Swartz with Willdenow and others as giving *stalked glands* to the involucre of *spinulosum*, and in his description of *dilatatum*, or *L. multiflora*, as he calls it, he repeats the assertion, and for that reason he identifies *spinulosum* with *dilatatum*—a reason

exactly the opposite of Mr. Davenport's for doing the same thing. My own edition of Swartz is that of 1806, and in that he says nothing about the indusium. May there not be a later edition in which the indusium is mentioned? At all events Newman identifies his species with *Polystichum spinosum*, Roth; and Swartz in his addenda while giving *P. spinosum*, Roth, as one of the synonyms of *A. spinulosum*, raises the question "an vere hujus?" whether it truly belongs to this? Desvaux is the author whose description of *Nephrodium, spinulosum* Hooker has chosen to follow in his *Syn. Fil.*, although Desvaux is a later writer than Swartz; and Hooker says of it that the involucrum is *not* gland-ciliated. But *N. dilatatum*, which is taken from the same author, and is classed as a variety of *spinulosum*, is said to have the "involucrum gland-ciliated." And yet our American writers claim that neither of the native representatives of these ferns possess gland-ciliated involucres. It would seem as if a character which is so undecided, and which varies so much in different countries, were better dropped altogether as a distinguishing feature of the species.

Inasmuch as I am one of those who regard the different forms of *A. spinulosum* as variations rather than varieties, my attempt to find a description which would fit the Watson form has been made merely out of curiosity, and not with a desire to introduce any further confusion into the nomenclature.

BENJ. D. GILBERT.

§ **Freeman J. Bumstead, M. D., LL.D.**—Dr. Bumstead, one of the earliest members of the Torrey Botanical Club, died Nov. 28, at the too early age of 53. He was thrown from a carriage in Central Park, last spring; the driver was killed, and the Doctor had his left arm broken and was besides severely bruised. A friend, calling on him shortly after, found him confined to his bed, but hard at work on a new edition of his medical treatise. But he overtasked himself and never regained his health.

Dr. Bumstead was a native of Boston, was trained at the Boston Latin School, and graduated with Whitney, the Sanscrit scholar, at Williams College. We have heard him tell that Whitney taught him how to prepare ornithological specimens. Like many other graduates of Williams, he cherished a warm attachment to his alma mater, and was highly gratified when, last summer, she conferred on him the degree of Doctor of Laws. In his profession in this city Dr. Bumstead filled various positions of honor and influence.

About the year 1871 he went to Europe with his family, and was absent two or three years. He occupied a good portion of his time there in studying under Pfitzer at Heidelberg, Boehm at Vienna and others, their methods of investigating the anatomy and physiology of vegetable life, and returned home with the hope and intention of doing some good work in this direction. But the demands of his profession and of a growing family deferred the day till he was surprised by death.

Dr. Bumstead was at once an energetic and wise man, and a warm-hearted friend. He had not of late years frequented the Club meetings, but those of us who were wont to gather around his beloved Dr. Torrey will keenly feel that a link is missing.